PERFORMANCE WORK STATEMENT
WORK ASSIGNMENT (WA) B-06

I. ADMINISTRATIVE

A. Title: Region 2 New York Bight Monitoring Program, Chemical Analytical Services

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C. Quality Assurance

The tasks in this work assignment require the use specific laboratory procedures. A quality assurance project plan (QAPP) has been developed and approved by EPA that addresses the standard operating procedures including information gathered on the checklist. The QAPP identifies field and laboratory procedures. The project specific quality assurance issues must be addressed in the monthly progress reports as specified under Task 0, below. These issues will be provided by the EPA WAM upon issuance of the WA.

D. Background

Excess nutrient loading to New York/New Jersey (NY-NJ) Harbor leads to elevated nutrient levels in waters of the New York Bight Apex. Enhanced primary production associated with elevated nutrient loads increases the flux of oxygen-consuming detritus to the seafloor. During summer months, when the water column is highly stratified due to high sea surface temperatures, the increased oxygen demand can deplete dissolved oxygen concentrations in New York Bight bottom waters to levels that cannot support aquatic life. Persistent low-oxygen conditions across wide areas of the Bight can result in severe impacts to local benthic populations (and associated fisheries) due to low-oxygen related mortality. This monitoring places emphasis on monitoring conditions that are directly associated with eutrophication (e.g., ambient nutrient concentrations) and that increase the potential for widespread low oxygen events (e.g., stratification of the water column).

EPA Region 2 and the States of New York and New Jersey are working collaboratively through the NY-NJ Harbor Estuary Program's Nutrient Working Group (NWG) to develop nutrient TMDLs intended to abate low dissolved oxygen levels throughout the NY/NJ Harbor Estuary, including the New York Bight. These TMDLs will be developed using the System Wide Eutrophication Model (SWEM) outputs. Pursuant to this effort, EPA is implementing a program to monitor nutrient and dissolved oxygen concentrations in the New York Bight, and to assess hypoxic or potential hypoxic conditions in the Bight. The program will also provide water quality data that are necessary for assessing the performance, refining boundary inputs to, and determining the need for recalibration of the model used by EPA (through its contractor) to

describe and predict eutrophication throughout the New York New Jersey Harbor estuary system (i.e. the System Wide Eutrophication Model, or SWEM).

The main objectives for this monitoring program is to provide data on eutrophication-related water quality parameters at stations along the seaward perimeter boundary of the New York Bight during late summer months (August-September) to allow boundary conditions to be better defined in the SWEM. The data collected will be provided to EPA's contractor to ensure that conditions are adequately described in the SWEM and to allow verification, validation and recalibration (if necessary) of the model during its application to TMDL development. The sample design of this project is based on a previous survey conducted in 1995 by NYCDEP, specifically for the initial development and calibration of SWEM. The sampling locations in the 1995 survey and those of the revised EPA New York Bight Water Quality Monitoring Program were designed to capture data at scales that are relevant for Bight-wide processes such as eutrophication.

Data obtained during the surveys will be reviewed by Dredging, Sediments, and Oceans Team (DSOT), and/or Monitoring Operations Section (MOS) project team members to identify whether conditions violate the EPA Ambient Aquatic Life Water Quality Criteria for Dissolved Oxygen (Saltwater), pursuant to section 304 (a) (1) of the Clean Water Act. These data will be relayed to the New York/New Jersey Harbor Estuary Program (HEP) coordinator for distribution to harbor stakeholders and for distribution to EPA's SWEM contractor, HydroQual. HydroQual will use the data to verify and validate the SWEM and examine the need for recalibration of the model for TMDL development.

The data collected previously for SWEM in 1995 and the new data being collected by EPA are all considered to be primary data, all collected with the intention of supporting SWEM. 1995 data were specifically used for SWEM development and calibration, including both skill assessment and selection of model constants, coefficients, and formulations. The newly generated data (2008/2009) will be used for further skill assessment to demonstrate that the calibrated SWEM can reproduce ambient conditions other than 1995 for which it was originally calibrated. This demonstration, applying a calibrated model for conditions different from the calibration, is referred to as model validation. It was not possible to do SWEM validation in the Bight previously because sufficient data were not available.

II. OBJECTIVE

The contractor shall perform chemical nutrient analyses on water samples collected from 20 monitoring stations in the New York Bight. Analytical results will be submitted to EPA Region 2.

III. TASK DETAIL

TASK 0: Work Plan

The contractor shall prepare a work plan, which references existing Programmatic Quality Assurance Project Plan (PQAPP) and any appropriate changes pertinent to the current task. The work plan shall include a description of: (a) proposed staff; (b) the number of hours and labor classifications proposed for each task, to include both prime contractor and subcontractor (if any) labor; and (c) a list of deliverables, with due dates and schedule for deliverables.

The work plan shall explain that analyses performed in this work assignment will conform to all the procedures described in the QAPP. This task also includes monthly progress and financial reports which are to be submitted pursuant to Attachment 2 to the contract. The monthly progress report shall indicate, in a separate QA section, whether significant QA issues have been identified and how they are being resolved. Monthly financial reports must include a table with the invoice LOE and costs broken out by the tasks in this WA. The contractor shall immediately notify the Project officer and WA manager if any changes to the collection and analysis of the data occur and prepare a new supplement to the PQAPP accordingly.

TASK 1: Chemical Analysis of Water Samples

The contractor shall perform chemical analyses of sea water samples collected from ocean waters of the New York Bight and collected by Region 2 scientist from the Ocean Survey Vessel BOLD. Table 1 presents analytics and analytical requirements.

Table 1. Analytical Requirements

Parameter	Matrix	SOP	Method	Region 2 Reporting Limit for NY Bight Project	Modeling* Guidance	Units	Holding Time**
Ammonia	Aqueous	C-80	EPA 350.1	0.005 - .01	0.001	mg/L	28days
Particulate Silicon	Aqueous	C-109	EPA 200.7, Rev 4.4	0.004 (500 mL is filtered)	0.01	mg/L	Filter within 24 hrs
Dissolved Silicon	Aqueous	C-109	EPA 200.7, Rev 4.4	0.01	0.01	mg/L	6 Months

* All samples, except silicon, will be held in the laboratory at 4^{o} C.

Chemical analyses will be performed on 70 samples collected in September. Analytical results will be reported in a data package complete with quality control documentation and raw data.

The following components of this task should be described, scheduled and budgeted in the work plan:

a. Chemical analyses of the 70 water samples. This number includes field blanks and quality assurance duplicate samples.

b. The contractor shall submit the data report in paper and electronic documentation to the EPA WAM. The electronic version should be submitted in each of Microsoft Word and Excel packages as best fits the narrative reporting and data spreadsheet presentation, and PDF format.

Deliverable(s)

i. Finalized data reports with attachments

ii. Reports shall be submitted to EPA in electronic copy by disk or email in MS Word/Excel and PDF, and on paper.

III. DELIVERABLE SCHEDULE

Task#	Activity	Due Date
0	Prepare work plan	21 calendar days after receipt of WA.
1	Receipt of water samples	September 18, 2009
1	Chemical analyses of water samples	Upon approval of work plan
	Analytical data reports	The contractor shall submit two copies of the Final Reports to EPA and transmit one copy electronically. All final reports due by December 31, 2009.

IV. MISCELLANEOUS

Software Application Files and Accessibility

All software and electronic information technology delivered to the Government, to include software application files, shall conform to the requirements relating to accessibility as detailed to the 1998 amendments to the Rehabilitation Act, particularly, but not limited to, § 1194.21 Software applications and operating systems and § 1194.22 Web-based intranet and internet information and applications. **See**: **http://www.section508.gov/**

Preferred text format:	MS Word, 8.0 or higher (Office 2003 or higher)
Preferred spreadsheet format:	MS Excel for Windows or higher
Preferred presentation format:	Power Point, Office 2003 or higher
Preferred graphics format:	Each graphic is an individual GIF file
Preferred portable format:	Adobe Acrobat, version 6.0